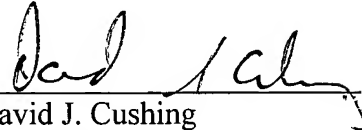


Preliminary Amendment  
Attorney Docket Q68831

**REMARKS**

Entry and consideration of this Amendment is respectfully requested.

Respectfully submitted,



David J. Cushing  
Registration No. 28,703

SUGHRUE MION, PLLC  
2100 Pennsylvania Avenue, N.W.  
Washington, D.C. 20037-3213  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

Date: April 2, 2002

2002 APR 2 10 00 AM

APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

3. (Amended)A tunable laser according to ~~either claim 1 or claim 2~~, characterized in that the length  $L_2$  of the tunable section (2) depends on the tuning range of the laser in accordance with the following equation:

$$\Delta\lambda = \lambda^2/2(n_1L_1+n_2L_2)$$

where  $\Delta\lambda$  is the tuning range of the laser,

$\lambda$  is the emission wavelength of the laser, and

$n_1, n_2$  are the respective refractive indices of the first and second sections of the laser cavity.

5. (Amended)A tunable laser according to ~~any preceding claim~~claim 1, characterized in that the fixed reflector (15) and the mobile reflector (20) each have a reflectivity greater than or equal to 90%.

6. (Amended)A tunable laser according to ~~any preceding claim~~claim 1, characterized in that the fixed reflector (15) is an etched mirror.

10. (Amended)A tunable laser according to ~~any one of claims 6 to 9~~claim 6, characterized in that the fixed reflector (15) is on the front face of the active section (1).

11. (Amended)A tunable laser according to ~~any preceding claim~~claim 1, characterized in that the rear face of the active section (1) is antireflection treated.

12. (Amended)A tunable laser according to ~~any preceding claim~~claim 1, characterized in that the mobile reflector (20) is a mirror external to the laser cavity.

16. (Amended)A tunable laser according to ~~any one of claims 12 to 15~~claim 12,

characterized in that the mobile reflector (20) is controlled by a micro-electro-mechanical (MEM) controller.

17. (Amended) A tunable laser according to ~~any one of claims 1 to 16~~ claim 1, characterized in that the tunable section (2) is an air area.

18. (Amended) A tunable laser according to ~~any one of claims 1 to 16~~ claim 1, characterized in that the tunable section (2) is a gas area.

19. (Amended) A method of fabricating a tunable edge-emitting semiconductor laser according to ~~claims 1 to 18~~ claim 1, characterized in that it includes the following steps:

- producing a laser die (10) including a substrate (8) and an active layer (11) consisting of a gain medium, the length  $L_1$  of the gain medium being from 5  $\mu\text{m}$  to 12  $\mu\text{m}$ ,
- producing a fixed etched mirror (15) on the front face of the laser die (10),
- mounting the laser die (10) on a base (50), and
- producing a mobile reflector (20) on the base (50) to the rear of the laser die (10).